

JON M. HUNTSMAN, JR.

Governor

GARY HERBERT Lieutenant Governor

Department of Environmental Quality

William J. Sinclair
Acting Executive Director

DIVISION OF AIR QUALITY Cheryl Heying Director

DAQE-IN0103270019-09

April 28, 2009

George Cross Intermountain Power Service Corporation 850 West Brush Wellman Rd Delta, UT 84624-9522

Dear Mr. Cross:

Re:

Intent to Approve: Minor Modification to Approval Order DAQE-AN0327015-05 to Replace Fabric Filters, Millard County; CDS A; Attainment Area, NSPS (Part 60), Nonattainment or

Maintenance Area, Title IV (Part 72 / Acid Rain), Title V (Part 70)

Project Number: N010327-0019

The attached document is the Intent to Approve for the above-referenced project. The Intent to Approve is subject to public review. Any comments received shall be considered before an Approval Order is issued. The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an Approval Order. An invoice will follow upon issuance of the final Approval Order.

Future correspondence on this Intent to Approve should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. The project engineer for this action is Camron Harry, who may be reached at (801) 536-4232.

Sincerely,

Ty L. Howard, Manager New Source Review Section

TLH:CAH:kw

cc:

Mike Owens

Central Utah Health Department

150 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144820 • Salt Lake City, UT 84114-4820
Telephone (801) 536-4000 • Fax (801) 536-4099 • T.D.D. (801) 536-4414

www.deq.utah.gov
Printed on 100% recycled paper

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

INTENT TO APPROVE: Minor Modification to Approval Order DAQE-AN0327015-05 to Replace Fabric Filters

Prepared By: Camron Harry, Engineer Phone: (801) 536-4232 Email: caharry@utah.gov

INTENT TO APPROVE NUMBER

DAQE-IN0103270019-09

Date: April 28, 2009

Intermountain Generation Station

Source Contact: Mr. George Cross Phone: (801) 864-4414

Ty L. Howard, Manager New Source Review Section Utah Division of Air Quality

ABSTRACT

Intermountain Power Service Corporation (IPSC) operates the Intermountain Generating Station (IGS) coal fired steam-electric plant, consisting of two 950 MW units located near Delta in Millard County. IPSC is requesting to replace existing baghouse exhaust blowers on DC-1 and DC-2 with blowers of larger flow capacity and replace the current polyester cloth bags with acrylic-teflon bags to enhance capture and reduce blinding. A logic control system will also be added to control pulse jet cleaning cycles based on differential pressure rather than timed cycling. No changes will be made to the physical configuration of the baghouses. As a result of increased air flows, PM₁₀ emissions will increase by 0.6 tons per year.

Conditions 25 and 26 within AO DAQE-AN0327015-05 regarding the 5 year demonstration of compliance with WEPCO rule have now expired and are removed with this modification.

Millard County is an attainment area of the NAAQS for all pollutants. NSPS, Subpart Da and Subpart Y apply to this source. NESHAP do not apply to this source. Boilers 1 & 2 are also Group 1, Phase II units under the Acid Rain Program. IPSC is a PSD source of NO_x, SO₂, CO, and PM₁₀. Title V of the 1990 Clean Air Act applies to this source. This AO is being processed as an enhanced AO, and the Title V permit will be administratively amended after the AO is issued.

The NOI for the above-referenced project has been evaluated and has been found to be consistent with the requirements of UAC R307. Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an AO by the Executive Secretary of the Utah Air Quality Board.

A 30-day public comment period will be held in accordance with UAC R307-401-7. A notification of the intent to approve will be published in the Millard County Chronicle Progress on May 7, 2009. During the public comment period the proposal and the evaluation of its impact on air quality will be available for the public to review and provide comment. If anyone so requests a public hearing, it will be held in accordance with UAC R307-401-7. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated. The proposed conditions of the AO may be changed as a result of the comments received.

Name of Permittee:

Permitted Location:

Intermountain Power Service Corporation 850 West Brush Wellman Rd Delta, UT 84624-9522

Intermountain Generation Station 850 West Brush Wellman Road Delta, UT 84624-9546

UTM coordinates: 364,200 m Easting, 4,374,400 m Northing SIC code: 4911 (Electric Services)

Section I: GENERAL PROVISIONS

- I.1 The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
- I.2 Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]

- I.3 All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the two-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of five (5) years. [R307-401]. [R307-415-6b]
- 1.4 At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]
- I.5 The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring. [R307-150]
- 1.6 The owner/operator shall comply with UAC R307-107. General Requirements: Unavoidable Breakdowns. [R307-107]
- 1.7 All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]

Section II: SPECIAL PROVISIONS

- II.A The approved installations shall consist of the following equipment:
- II.A.2 Electric Plant Source Wide
- II.A.16 Unit #1 Coal Fired Boiler

Equipped with low NO_x burners with a maximum heat input of 248 MMBtu/hr per burner. Rating - 9,225,000,000 MMBtu/hr

II.A.17 Unit #2 Coal Fired Boiler

Equipped with low NO_x burners with a maximum heat input of 248 MMBtu/hr per burner. Rating - 9,225,000,000 MMBtu/hr

II.A.18 #1A Boiler

Auxiliary boiler rated at 166 MMBtu/hr

II.A.19 #1B Boiler

Auxiliary boiler rated at 166 MMBtu/hr

II.A.20 Over-Fire Air-Port System

Boiler #1 & #2 over-fire air-ports system, 16 per boiler

II.A.21 **#1A Cooling Tower** Unit 1 cooling tower II.A.22 **#1B Cooling Tower** Unit 1 cooling tower II.A.23 **#1A Cooling Tower** Unit 2 cooling tower II.A.24 **#1B Cooling Tower** Unit 2 cooling tower II.A.25 **Two Helper Cooling Towers** II.A.26 #1A Generator Emergency generator, rated at 4,000 hp II.A.27 #1B Generator Emergency generator, rated at 4,000 hp II.A.28 #1C Generator Emergency generator, rated at 4,000 hp II.A.29 **#1B** Generator Diesel driven fire pump rated at 290 hp II.A.30 **#1C Generator** Diesel driven fire pump rated at 290 hp II.A.31 **Engine Driven Equipment** Compressors, generators, hydraulic pumps and diesel fire pumps II.A.32 **#1A Dust Collector** Coal railcar unloading dust collector II.A.33 **#1B Dust Collector** Coal railcar unloading dust collector II.A.34 **#1C Dust Collector** Coal railcar unloading dust collector II.A.35 **#1D Dust Collector** Coal railcar unloading dust collector II.A.36 **#2 Coal Dust Collector** Coal truck unloading dust collector

#3 Coal Dust Collector

Coal reserve reclaim dust collector

DAQE-IN0103270019-09

Page 4

II.A.37

II.A.38	Coal transfer building #1 dust collector
II.A.39	#5 Coal Dust Collector Coal transfer building #2 dust collector
II.A.40	#6 Coal Dust Collector Coal transfer building #4 dust collector
II.A.41	#11 Coal Dust Collector Coal crusher building dust collector
II.A.42	#13A Coal Dust Collector U1 Generation building coal dust collector
II.A.43	#13B Coal Dust Collector U1 Generation building coal dust collector
II.A.44	#14A Coal Dust Collector U2 Generation building coal dust collector
II.A.45	#14B Coal Dust Collector U2 Generation building coal dust collector
II.A.46	#1A Limestone Dust Collector Limestone unloading dust collector
II.A.47	#1B Limestone Dust Collector Limestone unloading dust collector
П.А.48	#1 Limestone Dust Collector Limestone transfer dust collector
II.A.49	#2 Limestone Dust Collector Limestone reclaim dust collector
II.A.50	#3 Limestone Dust Collector Limestone crusher dust collector
II.A.51	#4 Limestone Dust Collector Limestone preparation dust collector
II.A.52	#1 Lime Dust Collector Lime silo dust collector
II.A.53	#2 Lime Dust Collector Lime hopper dust collector

Page 6 II.A.54 **#3 Soda Ash Dust Collector** Soda ash silo dust collector II.A.55 #4 Soda Ash dust Collector Soda ash hopper dust collector II.A.56 Coal sample preparation building dust collector II.A.57 Sandblast facility dust collector II.A.58 **Dust Collector** U1 Generation building vacuum cleaning dust collector II.A.59 **Dust Collector** U2 Generation building vacuum cleaning dust collector II.A.60 **Dust Collector** U1 Fabric filter vacuum cleaning dust collector II.A.61 **Dust Collector** U2 Fabric filter vacuum cleaning dust collector II.A.62 **Dust Collector** GSB vacuum cleaning dust collector II.A.63 Guzzler truck dust collector II.A.64 Limestone silo bin vent filter II.A.65 #1A Filter Fly ash silo bin vent filter II.A.66 #1B Filter Fly ash silo bin vent filter II.A.67 Laboratory fume hoods II.A.68 #1A Tank Fuel oil tank - 675,000 gallons II.A.69 #1B Tank

Fuel oil tank - 675,000 gallons

Gasoline Tank 500 gallons

Diesel Tank 10,000 gallons

II.A.70

II.A.71

DAQE-IN0103270019-09

II.A.72	Diesel Day Tanks Not to exceed 560 gallons per tank
II.A.73	Mobile Oil Storage Tanks Not to exceed 12,000 gallons per tank
II.A.74	Turbine Lube Oil Units Not to exceed 40,000 gallons per tank
II.A.75	Diesel Tank Underground storage diesel tank - 20,000 gallons
II.A.76	Gasoline Tank Underground storage gasoline tank - 6,000 gallons
II.A.77	Used Oil Tank 10,000 gallons
II.A.78	Coal Pile Active and reserve
II.A.79	Landfill Class III Industrial Waste Landfill
II.A.80	Coal Stackout
II.A.81	Limestone storage pile
II.A.82	Combustion byproducts stackout & stockpile
II.A.83	Combustion byproducts landfill
II.A.84	Solvent Washer
II.A.85	Coal Conveyors
П.А.86	Paint booth/shops
II.A.87	Bulb recycling crusher
II.A.88	Paved Haul Roads
II.A.89	Unpaved Haul Roads
II.A.90	Coal Truck Unloading Grating

II.B Requirements and Limitations

II.B.1 Intermountain Generating Station

II.B.1.a Visible emissions from the following emission point sources shall not exceed the following values:

A. All abrasive blasting - 40% opacity (grandfathered equipment)

B. All other points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9.

For sources that are subject to NSPS, except for the units equipped with continuous opacity monitoring system, opacity shall be determined by conducting observations in accordance with 40 CFR 60.11(b) and 40 CFR 60, Appendix A, Method 9. [R307-201-3]

II.B.1.b The following consumption limit shall not be exceeded: 50,000 barrels of fuel oil consumed per calendar year in the auxiliary boilers.

To determine compliance with this annual limit, the owner/operator shall calculate a total by the January 20th of each year using data from the previous 12 months (ending with December 31). Records of consumption shall be kept for all periods when the auxiliary boilers are in operation. Consumption shall be determined by fuel oil totalizer records. The records of consumption shall be kept on a monthly basis. [R307-401]

II.B.1.c The owner/operator shall combust only bituminous, subbituminous coals, and synfuel Covol 298-1, as primary fuels and shall only use diesel oil or natural gas during the startups, shutdowns, maintenance, performance tests, upsets and for flame stabilization in the 9,225 x 10E+6 Btu/hr boilers. Only No. 2 oil shall be used in 166 x 10E+6 Btu/hr boilers. The owner/operator may fuel-blend self-generated used oil with coal at the active coal pile reclaim structure providing that self-generated used oil has not been mixed with hazardous waste. [R307-401]

II.B.1.d The sulfur content of any fuel oil combusted shall not exceed:

A. 0.85 lb/MMBtu heat input for fuel oil used in the main boilers.

B. 0.58 percent by weight for fuel oil combusted in the auxiliary boilers.

The sulfur content shall be determined by ASTM Method D-4294-89 or approved equivalent. Certification of fuel oil shall either be by IPSCs own testing or test reports from the fuel oil marketer. [R307-203]

II.B.1.e IPSC shall abide by the latest fugitive dust control plan submitted to the Executive Secretary for control of all dust sources associated with the Intermountain Power Generation site.

Any haul road speeds established in the plan shall be posted. [R307-205]

DAQE-IN0103270019-09

Page 9

II.B.1.f The facility shall abide by all applicable requirements of R307-205 for Fugitive Emission and Fugitive Dust sources. [R307-205]

II.B.1.g Dust Collectors

Except for times of start-up, shut-down, or malfunction, emissions to the atmosphere, at all times, from the indicated emission points, shall not exceed the following rates and concentrations:

Pollutant	Differential Pressure Range Across the Dust Collector
	(Inches of water gage)
(4) Rail car unloading units	0.5 to 12
Transfer building #1	0.5 to 12
Transfer building #2	0.5 to 12
Transfer building #4	0.5 to 12
Crusher building #1	0.5 to 12
Unit one 13A	0.5 to 12
Unit one 13B	0.5 to 12
Unit two 14A	0.5 to 12
Unit two 14B	0.5 to 12
Limestone preparation building	0.5 to 12

If differential pressure is less than 2 inches or greater than 10 inches, work orders will be written to investigate. Dust collector may run in the 0.5 to 2 or 10 to 12 range if reason is known. Intermittent recording of the reading is required on a monthly basis. The instrument shall be calibrated against a primary standard annually. Preventive maintenance shall be done quarterly on each baghouse. [R307-401]

II.B.1.h Auxiliary Boiler

Except for times of start-up, shut-down, or malfunction emissions to the atmosphere at all times from the indicated emission points shall not exceed the following rates and concentrations:

lb/10E+6 Btu heat input		lbs/hr
0.10	20	
0.69	100	
0.35	58	
	0.10 0.69	0.10 20 0.69 100

Testing shall be done in accordance with the requirements from the most current Title V permit. [R307-401]

II.B.1.h.1 Existing Source Operation: For an existing source/emission point, the production rate during all compliance testing shall be no less than 90% of the maximum production achieved in the previous three (3) years.

Notification: The Executive Secretary shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Executive Secretary.

The source test protocol shall be approved by the Executive Secretary prior to performing the test(s). The source test protocol shall outline the proposed test methodologies, and stack to be tested. A pretest conference shall be held, if directed by the Executive Secretary.

Sample Location: The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Executive Secretary. Access that meets the standards of the Occupational Safety and Health Administration (OSHA) or the Mine Safety and Health Administration (MSHA) shall be provided.

Volumetric Flow Rate: 40 CFR 60, Appendix A, Method 2, 2F, 2G, 2H, or other testing methods approved by the Executive Secretary.

CO: 40 CFR 60, Appendix A, Method 10, or other testing method approved by the Executive Secretary.

 NO_x : 40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other testing method approved by the Executive Secretary.

PM₁₀: 40 CFR 60, Appendix A, Method 5B, or other testing methods approved by the Executive Secretary. [R307-401]

II.B.2 Unit #1 & Unit #2 Main Boilers

- II.B.2.a IPSC shall use synfuel Covol 298-1 as an alternative fuel in the Unit #1 and #2 Main boilers and shall conduct its operations of the Intermountain Generating Station (IGS) coal fired electric steam plant in accordance with the terms and conditions of this AO, which was written pursuant to IPSC's Notice of Intent submitted to the DAQ on October 21, 2004, and February 22, 2005. [R307-401]
- II.B.2.b The owner/operator shall install, calibrate, maintain, and operate CEMs on the main boiler stacks and SO₂ removal scrubber inlets. The owner/operator shall record the output of the system, for measuring the opacity, SO₂, NO_x, and CO₂ emissions. The monitoring system shall comply with all applicable sections of R307-170, UAC; and 40 CFR 60, Appendix B.

All continuous emissions monitoring devices as required in federal regulations and state rules shall be installed and operational prior to placing the affected source in operation.

Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under paragraph (d) 40 CFR 60.13, the owner/operator of an affected source shall continuously operate all required continuous monitoring devices and shall meet minimum frequency of operation requirements as outlined in 40 CFR 60.13 and Section UAC R307-170. [R307-150]

II.B.2.c Unit #1 & Unit #2 Main Boiler Stack

Except for time of start-up, shut-down, malfunction (NO_x or PM_{10} only), or emergency conditions (SO_2 only), emissions to the atmosphere at all times from the indicated emission points shall not exceed the following rates and concentrations:

Pollutant lb/1E+6 Btu heat input

PM₁₀ 0.0184*

SO₂ 0.138 ** (lb/10E+6 Btu heat input based on 30-day rolling average) NO_x 0.461 ** (lb/10E+6 Btu heat input based on 30-day rolling average)

* Test once a year. The Executive Secretary may require testing at any time.

II.B.2.c.1 Calculations for Test Results: Unit #1 & Unit #2 Boiler Stacks

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the emission limitation.

Pollutant lbs/hr (Compliance demonstration)

CO 1320 lb/hr rate (monthly block average)

Combustion flue gas percent O₂ shall be monitored and recorded at least once per 15 minutes at the exit path of each boiler. Measurements are weighted average results collected from several sensors located in each boiler exit flue path. Calibrations shall be maintained within manufacturers recommendations.

Over-Fire Air (OFA) operating condition shall be monitored and recorded at least once per 15 minutes. Monitoring shall include OFA position and status: i.e., No OFA, 1/3 OFA, 2/3 OFA, throttled or open. Operational status is measured by OFA system damper position.

Using the data above and this formula, CO concentration (ppmdv) shall be calculated and averaged hourly, except for periods of calibration, maintenance, or malfunction of the instrumentation or data system. For periods of calibration, maintenance, or malfunction of instrumentation or data collection system, missing data shall be back filled following procedures similar to 40 CFR Part 75 Subpart D, and used for compliance determinations.

 $[Cppmvd] = n * (O_2\%)^a$

Where:

[Cppmvd] = concentration of CO in parts per million volume dry n = curve specific factor obtained from the table below $O_2\% = \text{percent } O_2 \text{ measured at the boiler stack exit}$ a = curve specific exponent obtained from the table below

^{**} Compliance for NO_x and SO₂ emissions shall be demonstrated through use of a continuous emissions monitoring system as outlined in Condition II.B.2.b. [R307-401]

Values for n and a factors:

	n	a
No. OFA	47259	-7.6817
1/3 OFA	66265	-7.9824
2/3 OFA (Throttled)	4029.2	-4.0112
2/3 OFA (full open)	1372.4	-3.0919

The hourly mass emission rates in lb per hour shall be calculated using the following formula or any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the emission limitation.

[Clb/hr] = [Cppmvd] * 2.59 * 10E-9 * MW * Fd * 20.9/(20.9-O₂%) * HI

Where:

[Clb/hr] = pound per hour emission rate

[Cppmvd] = hourly average of CO emissions in parts per million

2.59*10E-9 = conversion factor for pound per standard cubic feet

MW = molecular weight of CO

Fd=F factor to convert standard cubic feet per million Btu heat input.

O₂% = hourly average of excess combustion oxygen, in percent

HI = heat input, in million Btu per hour

By the 15th day of each month, the monthly average of CO emissions in lb/hr shall be calculated by using the hourly average CO emission values in lb/hr. [R307-401]

II.B.3 Engine Driven Equipment

II.B.3.a Emergency generators shall be used for routine maintenance and electricity producing operation only during the periods when regular electric power supply is interrupted, except for routine engine maintenance and testing. Records documenting generator usage shall be kept in a log and shall show the date the generator was used, the duration in hours of generator usage, and the reason for each usage. [R307-401]

II.B.3.b The diesel driven fire pumps shall be operated on an emergency basis only, except for routine engine and fire system maintenance and testing. Records documenting diesel driven fire pump usage shall be kept in a log and shall show the date the diesel driven fire pump was used, the duration in hours of use, and the reason for each usage. [R307-401]

Section III: APPLICABLE FEDERAL REQUIREMENTS

In addition to the requirements of this AO, all applicable provisions of the following federal programs have been found to apply to this installation. This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including UAC R307.

NSPS (Part 60), Da: Elec Util Steam Gener After 9/18/78 Title IV (Part 72 / Acid Rain), (No subparts)

NSPS (Part 60), A: General Provisions NSPS (Part 60), Y: Coal Preparation Plants

PERMIT HISTORY

The final AO will be based on the following documents:

Is Derived From

Additional PTE information dated April 2, 2009

Is Derived From

NOI dated December 22, 2008

Supersedes

DAQE-AN0327015-05 dated March 25, 2005

ACRONYMS

The following lists commonly used acronyms and their associated translations as they apply to this document:

40 CFR Title 40 of the Code of Federal Regulations

AO Approval Order ATT Attainment Area

BACT Best Available Control Technology

CAA Clean Air Act

CAAA Clean Air Act Amendments

CDS Classification Data System (used by EPA to classify sources by size/type)

CEM Continuous emissions monitor

CEMS Continuous emissions monitoring system

CFR Code of Federal Regulations

CO Carbon monoxide

COM Continuous opacity monitor

DAQ Division of Air Quality (typically interchangeable with UDAQ)

DAQE This is a document tracking code for internal UDAQ use

EPA Environmental Protection Agency

HAP or HAPs Hazardous air pollutant(s)

ITA Intent to Approve

MACT Maximum Achievable Control Technology

NAA Nonattainment Area

NAAQS National Ambient Air Quality Standards

NESHAP National Emission Standards for Hazardous Air Pollutants

NOI Notice of Intent NO_x Oxides of nitrogen

NSPS New Source Performance Standard

NSR New Source Review

PM₁₀ Particulate matter less than 10 microns in size PM_{2.5} Particulate matter less than 2.5 microns in size

PSD Prevention of Significant Deterioration

R307 Rules Series 307

R307-401 Rules Series 307 - Section 401

SO₂ Sulfur dioxide

Title IV Title IV of the Clean Air Act
Title V Title V of the Clean Air Act
UAC Utah Administrative Code

UDAQ Utah Division of Air Quality (typically interchangeable with DAQ)

VOC Volatile organic compounds